

**UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

TESSERA ADVANCED TECHNOLOGIES,  
INC.,

Plaintiff,

V.

SAMSUNG ELECTRONICS CO., LTD. and  
SAMSUNG ELECTRONICS AMERICA,  
INC.,

Defendants.

Civil Action No.: 2:17-cv-671

## JURY TRIAL DEMANDED

## COMPLAINT

Plaintiff Tessera Advanced Technologies, Inc. (“TATI” or “Plaintiff”) brings this patent infringement action against Defendants Samsung Electronics Co., Ltd. (“SEC”) and Samsung Electronics America, Inc. (“SEA”) (collectively, “Samsung” or “Defendants”) as follows:

### NATURE OF THE ACTION

1. This is a civil action for infringement of United States Patent Nos. 6,512,298 (“298 patent”) and 6,852,616 (“616 patent”) (collectively, the “Asserted Patents”) under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*

## THE PARTIES

2. Plaintiff TATI is a Delaware corporation with its principal place of business at 3025 Orchard Parkway, San Jose, California 95134.

3. Defendant SEC is a company organized under the laws of the Republic of Korea with its principal place of business located at 129 Samsung-ro, Maetan-3dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-742 in the Republic of Korea.

4. Defendant SEA is a New York corporation with its principal place of business at 85 Challenger Road, Ridgefield Park, New Jersey 07660. SEA is a wholly-owned subsidiary of SEC. SEA's registered agent, The Corporation Trust Company, is located at Corporation Trust Center, 111 Eighth Avenue, New York, New York, 10011.

5. The Asserted Patents are infringed by various semiconductor components in Samsung products, including components in at least Samsung's Galaxy S6, S7, and S8 devices. Defendants SEC and SEA are related entities that work in concert to design, manufacture, import, distribute, and/or sell those infringing devices.

#### **JURISDICTION AND VENUE**

6. The Court has subject matter jurisdiction over these claims under 28 U.S.C. §§ 1331 and 1338(a) and the patent laws of the United States, 35 U.S.C. § 1 *et seq.*

7. The Court has personal jurisdiction over each of the Defendants consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. On information and belief, each Defendant has regularly and systematically transacted business in Texas, directly or through subsidiaries or intermediaries, and/or committed acts of patent infringement in Texas as alleged more particularly below. Samsung has also placed infringing products into the stream of commerce by shipping those products into Texas or knowing that the products would be shipped into Texas. In addition, SEA's business operations relating to cellular mobile devices, which are devices accused of infringement in this Action, are

conducted primarily at its Texas facilities and (as of February 2015) over 2,000 people worked at SEA's Texas facilities.

8. With respect to Defendant SEC, a Korean company, venue is proper because suits against foreign entities are proper in any judicial district.

9. With respect to Defendant SEA, venue is proper in this district under 28 U.S.C. § 1400(b) because Defendant SEA has a regular and established place of business in this district and has committed acts of infringement in this district. Defendant SEA has a permanent office located at 1301 East Lookout Drive, Richardson, Texas 75082, which is located in Collin County and within this district. Defendant SEA also employs full-time personnel, such as engineers and senior managers in this district, including in Richardson, Texas. On information and belief, Samsung's business operations relating to cellular mobile devices are conducted primarily at its facilities located in Richardson. Defendant SEA has also committed acts of infringement in this district by commercializing, marketing, selling, distributing, and servicing certain Samsung-branded devices, including but not limited to phones and tablets, which are devices Plaintiff accuses of infringement in this Action.

### **THE ASSERTED PATENTS**

10. The '298 patent is entitled "Semiconductor Device and Method for Producing the Same," and issued on January 28, 2003, to inventors Ryuichi Sahara, Kazumi Watase, Takahiro Kumakawa, Kazuyuki Kainoh, and Nozomi Shimoishizaka. TATI owns the entire right, title, and interest in and to the '298 patent.

11. The '616 patent is entitled "Semiconductor Device and Method for Producing the Same," and issued on February 8, 2005, to inventors Ryuichi Sahara, Kazumi Watase, Takahiro

Kumakawa, Kazuyuki Kainoh, and Nozomi Shimoishizaka. TATI owns the entire right, title, and interest in and to the '616 patent.

### **CLAIMS FOR PATENT INFRINGEMENT**

12. The allegations provided below are exemplary and without prejudice to Plaintiff's infringement contentions provided pursuant to the Court's scheduling order and local rules. In providing these allegations, Plaintiff does not convey or imply any particular claim constructions or the precise scope of the claims. Plaintiff's claim construction contentions regarding the meaning and scope of the claim terms will be provided under the Court's scheduling order and local rules.

13. The accused products include, but are not limited to, Samsung's Galaxy S6, S7, and S8 devices. On information and belief, the accused products include infringing processors, memory, and other semiconductor components. *See [In-Depth Look] What's Inside the Galaxy S8 and S8+, SAMSUNG GLOBAL NEWSROOM* (May 19, 2017), <https://news.samsung.com/global/in-depth-look-whats-inside-the-galaxy-s8-and-s8>. As detailed below, each element of at least one claim of each of the Asserted Patents is literally present in the accused products. To the extent that any element is not literally present, each such element is present under the doctrine of equivalents.

### **COUNT I INFRINGEMENT OF THE '298 PATENT**

14. Plaintiff incorporates by reference the allegations set forth in paragraphs 1 through 13 as though fully set forth herein.

15. On information and belief, Samsung has infringed and continues to infringe, and/or has induced the infringement of, one or more claims of the '298 patent, including claim 1 and other claims that depend from claim 1, literally or under the doctrine of equivalents, by

making, using, importing, selling, and/or offering to sell in the United States without authority or license, at least the Samsung Galaxy S6, S7, S8, and other devices containing substantially similar wafer level packaging (WLP) chips such as Power Management IC (“PMIC”) chips (collectively, the “’298 Accused Products”).

16. Claim 1 of the ’298 patent recites a “semiconductor device” that requires “a semiconductor substrate provided with at least one semiconductor element[.]” On information and belief, the ’298 Accused Products include a semiconductor device with a semiconductor substrate provided with at least one semiconductor element. For example, WLP chips in the ’298 Accused Products are semiconductor devices that include a silicon substrate with an integrated circuit that includes transistors.

17. Claim 1 of the ’298 patent requires “a first element electrode and a second element electrode formed on the semiconductor substrate and connected electrically to the semiconductor element[.]” On information and belief, the ’298 Accused Products include a semiconductor device with a first element electrode and a second element electrode that are formed on the semiconductor substrate and connected electrically to the semiconductor element. For example, WLP chips in the ’298 Accused Products include a first contact pad and a second contact pad. The first and second contact pads are formed on the silicon substrate and connected electrically to transistors in the integrated circuit through contacts.

18. Claim 1 of the ’298 patent further requires “an insulating film formed so as to cover the first element electrode and the second element electrode[.]” On information and belief, the ’298 Accused Products include a semiconductor device with an insulating film that is formed so as to cover the first element electrode and the second element electrode. For example, WLP

chips in the '298 Accused Products include a polymer insulating layer above the first and second contact pads.

19. Claim 1 of the '298 patent further requires “a first opening formed on the insulating film and exposing at least one portion of the first element electrode[.]” On information and belief, the '298 Accused Products include a semiconductor device with a first opening that is formed on the insulating film and exposing at least one portion of the first element electrode. For example, WLP chips in the '298 Accused Products include a first opening in the polymer insulating layer that exposes a portion of the first contact pad.

20. Claim 1 of the '298 patent further requires “a second opening formed on the insulating film and exposing at least one portion of the second element electrode[.]” On information and belief, the '298 Accused Products include a semiconductor device with a second opening formed on the insulating film and exposing at least one portion of the second element electrode. For example, WLP chips in the '298 Accused Products include a second opening in the polymer insulating layer that exposes a portion of the second contact pad.

21. Claim 1 of the '298 patent further requires “a first external electrode formed immediately above the first element electrode and connected to the first element electrode via the first opening[.]” On information and belief, the '298 Accused Products include a semiconductor device with a first external electrode that is formed immediately above the first element electrode, and is connected to the first element electrode via the first opening. For example, WLP chips in the '298 Accused Products include a first lower copper-containing layer formed immediately above the first contact pad and connected to the first contact pad via the first opening, and on which is formed a first upper copper-containing layer that has portions formed atop a second polymer insulating layer.

22. Claim 1 of the '298 patent further requires "a second external electrode formed on the insulating film[.]" On information and belief, the '298 Accused Products include a semiconductor device with a second external electrode that is formed on the insulating film. For example, WLP chips in the '298 Accused Products include a second lower copper-containing layer formed on the polymer insulating layer and on which is formed a second upper copper-containing layer.

23. Claim 1 of the '298 patent further requires "a connecting wire formed on the insulating film and having one end connected to the second element electrode via the second opening and the other end connected to the second external electrode." On information and belief, the '298 Accused Products include a semiconductor device with a connecting wire that is formed on the insulating film, with one end connected to the second element electrode via the second opening, and the other end connected to the second external electrode. For example, WLP chips in the '298 Accused Products include a copper-containing wire formed on the polymer insulating layer, with one end connected to the second contact pad via the second opening, and the other end connected to the second lower copper-containing layer on which the second upper copper-containing layer is formed.

24. By at least May 2, 2016, Plaintiff disclosed the existence of the '298 patent to Samsung and identified at least some of Samsung's activities that infringe the '298 patent. Thus, Samsung has had knowledge of the '298 patent and that its activities infringe the '298 patent since at least May 2, 2016. Based on Plaintiff's disclosures, Samsung has also known or should have known since at least May 2, 2016 that its customers, distributors, and other purchasers of the '298 Accused Products are infringing the '298 patent at least because Samsung has known that it is infringing the '298 patent.

25. On information and belief, Samsung has continued to make, use, offer for sale, and/or sell the '298 Accused Products in the United States and/or import the '298 Accused Products into the United States despite its knowledge of the '298 patent and its infringement of that patent. Samsung's infringement has been and continues to be willful.

26. On information and belief, Samsung actively, knowingly, and intentionally induces infringement of one or more claims of the '298 patent under 35 U.S.C. § 271(b) by actively encouraging others to make, use, offer to sell, sell, and/or import '298 Accused Products or products containing infringing chips in the '298 Accused Products, in this judicial district and elsewhere in the United States. For example, Samsung actively promotes the sale, use, and importation of its infringing chips in marketing materials, technical specifications, data sheets, web pages on its website (e.g., [www.samsung.com](http://www.samsung.com)), press releases, and user manuals, as well as at trade shows (e.g., CES and Mobile World Congress) and through its sales and distribution channels that encourage infringing sales, offers to sell, and importation of the '298 Accused Products or products containing infringing chips in the '298 Accused Products. *See, e.g., [In-Depth Look] What's Inside the Galaxy S8 and S8+, SAMSUNG GLOBAL NEWSROOM* (May 19, 2017), <https://news.samsung.com/global/in-depth-look-whats-inside-the-galaxy-s8-and-s8> (discussing reduced battery consumption); *Power IC, SAMSUNG SEMICONDUCTOR GLOBAL WEBSITE*, <http://www.samsung.com/semiconductor/products/power-ic/power-ic/> (last visited Sept. 27, 2017).

27. Plaintiff has suffered and continues to suffer damages as a result of Samsung's infringement of the '298 patent.



**COUNT II**  
**INFRINGEMENT OF THE '616 PATENT**

28. Plaintiff incorporates by reference the allegations set forth in paragraphs 1 through 27 as though fully set forth herein.

29. On information and belief, Samsung has infringed and continues to infringe, and/or has induced the infringement of, one or more claims of the '616 patent, including claim 1 and other claims that depend from claim 1, either literally or under the doctrine of equivalents, at least under 35 U.S.C. § 271(g) by importing into the United States and/or offering to sell, selling, and/or using within the United States without authority or license, at least at least the Samsung Galaxy S6, S7, S8, and other devices containing substantially similar wafer level packaging ("WLP") chips such as Power Management IC ("PMIC") chips (collectively, the "'616 Accused Products"), where those PMIC components are made by a process practicing all of the limitations of one or more claims of the '616 patent.

30. Claim 1 of the '616 patent recites "[a] method for producing a semiconductor device" that requires "a first step of forming on a semiconductor substrate on which at least one semiconductor element is provided a first element electrode and a second element electrode electrically connected to the semiconductor element[.]" On information and belief, the '616 Accused Products include a semiconductor device produced by a method that includes a first step of forming a first element electrode and a second element electrode electrically connected to a semiconductor element on a semiconductor substrate. For example, WLP chips in the '616 Accused Products are semiconductor devices that include a first contact pad and a second contact pad. The first and second contact pads are formed on a silicon substrate with an integrated circuit that includes transistors. The first and second contact pads are electrically connected to the transistors in the integrated circuit through contact plugs.

31. Claim 1 of the '616 patent further requires “a second step of forming an insulating film so as to cover the first element electrode and the second element electrode[.]” On information and belief, the '616 Accused Products include a semiconductor device produced by a method that includes a second step of forming an insulating film that covers the first element electrode and the second element electrode. For example, WLP chips in the '616 Accused Products include a polymer insulating layer above the first element electrode and the second element electrode.

32. Claim 1 of the '616 patent further requires “a third step of forming a first opening for exposing at least one portion of the first element electrode and a second opening for exposing at least one portion of the second element electrode by selectively removing the insulating film[.]” On information and belief, the '616 Accused Products include a semiconductor device produced by a method that includes a third step of forming a first opening that exposes at least one portion of the first element electrode and a second opening that exposes at least one portion of the second element electrode by selectively removing the insulating film. For example, WLP chips in the '616 Accused Products include a first opening in the polymer insulating layer and a second opening in the polymer insulating layer that were formed by selectively removing those portions of the polymer insulating layer. The first opening exposes a portion of the first contact pad, and the second opening exposes a portion of the second contact pad.

33. Claim 1 of the '616 patent further requires “a fourth step of forming first substantially continuous, thin conductive film on the insulating film and within the first and second openings[.]” On information and belief, the '616 Accused Products include a semiconductor device produced by a method that includes a fourth step of forming a first substantially continuous, thin conductive film on the insulating film and within the first and

second openings. For example, WLP chips in the '616 Accused Products include a thin, conductive titanium-containing film on the polymer insulating layer and within the first and second openings, which on information and belief is deposited as a substantially continuous film.

34. Claim 1 of the '616 patent further requires “a fifth step of forming a second, thick conductive film selectively on the first, thin conductive film so as to fill up the first opening and the second opening and extend over portions of the first, thin conductive film between the first and second openings[.]” On information and belief, the '616 Accused Products include a semiconductor device produced by a method that includes a fifth step of forming a second, thick conductive film selectively on the first, thin conductive film so as to fill up the first opening and the second opening and extend over portions of the first, thin conductive film between the first and second openings. For example, WLP chips in the '616 Accused Products include a copper-containing layer that, on information and belief, is formed by selectively forming a thick, copper-containing conductive film so as to fill up the first opening and the second opening and extend over portions of the thin titanium-containing layer between the first and second openings.

35. Claim 1 of the '616 patent further requires “a sixth step of patterning the first and second conductive films by removing only an upper portion of the selectively formed second, thick conductive film and portions of the first, thin conductive film uncovered by the second, thick conductive film, thereby forming a first external electrode connected to the first element electrode via the first opening immediately above the first element electrode, forming a second external electrode and forming a connecting wire having one end connected to the second element electrode via the second opening and the another end connected to the second external electrode on the insulating film.” On information and belief, the '616 Accused Products include a semiconductor device produced by a method that includes a sixth step of patterning the first

and second conductive films by removing only an upper portion of the selectively formed second, thick conductive film and portions of the first, thin conductive film uncovered by the second, thick conductive film, thereby forming a first external electrode connected to the first element electrode via the first opening immediately above the first element electrode, a second external electrode, and a connecting wire with one end connected to the second element electrode via the second opening and another end connected to the second external electrode on the insulating film. For example, on information and belief, the copper-containing layer in the WLP chips in the '616 Accused Products is formed by patterning the thin titanium-containing film and the thick copper-containing film by removing only an upper portion of the thick copper-containing film and portions of the thin titanium-containing film uncovered by the thick copper-containing film, thereby forming a first external electrode (a portion of the copper-containing layer on which a solder ball electrode is formed) connected to the first contact pad via the first opening immediately above the first contact pad, a second external electrode (a portion of the copper-containing layer on which another solder ball electrode is formed), and a copper-containing connecting wire with one end connected to the second contact pad via the second opening and another end connected to the second external electrode on the polymer insulating layer.

36. WLP chips in the '616 Accused Products are neither materially changed by subsequent processes nor become a trivial and nonessential component of another product.

37. By at least May 2, 2016, Plaintiff disclosed the existence of the '616 patent to Samsung and identified at least some of Samsung's activities that infringe the '616 patent. Thus, Samsung has had knowledge of the '616 patent and that its activities infringe the '616 patent since at least May 2, 2016. Based on Plaintiff's disclosures, Samsung has also known or should

have known since at least May 2, 2016 that its customers, distributors, and other purchasers of the '616 Accused Products are infringing the '616 patent at least because Samsung has known that it is infringing the '616 patent.

38. On information and belief, Samsung has continued to make, use, offer for sale, and/or sell the '616 Accused Products in the United States and/or import the '616 Accused Products into the United States despite its knowledge of the '616 patent and its infringement of that patent. Samsung's infringement has been and continues to be willful.

39. On information and belief, Samsung actively, knowingly, and intentionally induces infringement of one or more claims of the '616 patent under 35 U.S.C. § 271(b) by actively encouraging others to make, use, offer to sell, sell, and/or import '616 Accused Products or products containing infringing chips in the '616 Accused Products, in this judicial district and elsewhere in the United States. For example, Samsung actively promotes the sale, use, and importation of its infringing chips in marketing materials, technical specifications, data sheets, web pages on its website (e.g., [www.samsung.com](http://www.samsung.com)), press releases, and user manuals, as well as at trade shows (e.g., CES and Mobile World Congress) and through its sales and distribution channels that encourage infringing sales, offers to sell, and importation of the '616 Accused Products or products containing infringing chips in the '616 Accused Products. *See, e.g., [In-Depth Look] What's Inside the Galaxy S8 and S8+, SAMSUNG GLOBAL NEWSROOM* (May 19, 2017), <https://news.samsung.com/global/in-depth-look-whats-inside-the-galaxy-s8-and-s8> (discussing reduced battery consumption); *Power IC, SAMSUNG SEMICONDUCTOR GLOBAL WEBSITE*, <http://www.samsung.com/semiconductor/products/power-ic/power-ic/> (last visited Sept. 27, 2017).

40. Plaintiff has suffered and continues to suffer damages as a result of Samsung's infringement of the '616 patent.

**JURY DEMAND**

41. Plaintiff demands a jury trial as to all issues that are triable by a jury in this action.

**PRAYER FOR RELIEF**

WHEREFORE, Plaintiff respectfully prays for relief as follows:

- (a) Judgment that each defendant is liable for infringement and/or inducing the infringement of one or more claims of each of the Asserted Patents;
- (b) Compensatory damages in an amount according to proof, and in any event no less than a reasonable royalty;
- (c) Treble damages for willful infringement pursuant to 35 U.S.C. § 284;
- (d) Pre-judgment interest;
- (e) Post-judgment interest;
- (f) Attorneys' fees based on this being an exceptional case pursuant to 35 U.S.C. § 285, including pre-judgment interest on such fees;
- (g) An accounting and/or supplemental damages for all damages occurring after any discovery cutoff and through final judgment;
- (h) Costs and expenses in this action; and
- (i) Any further relief that the Court deems just and proper.

Dated: September 28, 2017

/s/ Claire Henry  
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